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Fluid energy mill

Description of Technology: The present invention relates to fluid energy mills, in particular, to an improved fluid energy mill which is provided with a fluid dynamic control insert that maintains or improves the quality of the milled product at lower energy consumption and at lower cost of operation.

Patent Listing:

1. **US Patent No. 6,145,765**, Issued November 14, 2000, "Fluid energy mill"
http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6145765

Market Potential: Fluid energy mills of a vortex type are well known and widely employed in certain industries because of their efficiency and economy in comminution of particulate solids. A number of early designs are described in considerable detail in Andrews, U.S. Pat. No. 2,032,827. These mills generally comprise a disc-shaped zone wherein an inward circular or spiral flow of the gaseous fluid causes attrition of the particles at the periphery and provides a size separation in an intermediate zone. The mill combines the function of grinding and classification within a single chamber. Since the fluid is fed into the periphery and discharged at the axis of a vortex, there is a tendency for particles to be swept toward the central outlet in a spiral path. The force due to drag of the fluid acting on the suspended particle is opposed by the centrifugal force. This balance of forces can be so adjusted that coarse particles tend to return to or be held at the periphery for more attrition while smaller particles are swept to the center for collection in a cyclone and/or filters. In these mills, the energy for comminution is supplied in a gaseous fluid medium injected tangentially into the vortex chamber to create and maintain the vortex.

Benefits:

- Improved fluid energy mill which is provided with a fluid dynamic control insert that maintains or improves quality of milled product at lower energy consumption and lower cost of operation

Applications:

- Fluid energy mills

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